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CATALOG & CULTURE

- Tuberous Begonias
- Delphiniums
- Gloxinias
- Gerberas



New Marmorata Hybrid

VETTERLE & REINELT

Hybridizing Gardens

TELEPHONE
Santa Cruz 2067-W

CAPITOLA, CALIF.



Double Camelia Type, Natural Size

Foreword

AGAIN this year we are offering new developments in Tuberous Rooted Begonias, Delphiniums, Gloxinias, and Gerberas in hope to satisfy the public demand for new and better varieties of flowers.

Hundreds and in some cases thousands of crosses are made annually for that purpose and from the huge quantity of seedlings only few choicest are selected for seed or propagation. Only in such way is it possible to produce something really advanced and supreme in quality.

Our aim is to produce the very best for reasonable price.

Terms....

Cash with order or satisfactory reference.

Orders of seed, tubers and plants are prepaid within the U. S. A.

Express charges on orders of plants shipped with soil are charged collect.

Add 3 per cent to amount of order for sales tax.

All stock guaranteed true to description but no guarantee for the result of growing over which we have no control.

Tuberous Rooted Begonias

By selective interbreeding we have been able to make further progress in development of modern Tuberous Rooted Begonias and are offering this year the following new color shades in the Double Camelia Type.

CARDINAL RED. A light crimson somewhat like American Beauty in size and vigor, but decidedly brighter red.

LIGHT SALMON SHADES. Beautiful new soft light colors.

DARK SALMON SHADES. New color variations, shading into apricot and orange.

MARMORATA HYBRIDS. An entirely new development in variegated begonias. Beautiful large flowers of perfect camelia form in pink, rose and salmon shades with striking red edges.

NEW LLOYDII TYPES. In addition to all colors offered for the first time separately, we have a number of crosses between the large camelia types and the true Lloydii. They are combining the large flowers of camelia with the hanging type of Lloydii. Only four color groups are available.

JOIN *American Begonia Society*

Interesting bulletins issued monthly. Membership \$1.00 per year. Write to Mrs. J. S. Williams, 2034 Florida, Long Beach, Calif.



Lloydii Type for Hanging Baskets

Choice Seedlings

Every year we select the choicest new seedlings which are above average in size, form and color and are offering them separately for those who desire only the best. Besides the novelties mentioned we include in this group all new developments preliminary to introduction. This year we are including some new beautiful pastel shades in salmon, apricot and yellow. For show purposes and greenhouse decoration they are the last word in Tuberous Begonias.

PRICES

50c each, \$5.00 per dozen, \$35.00 per hundred.



Frilled Tuberous Rooted Begonia

General Collection of Tuberous Begonias

Delivery for tubers, January to end of March.

Single Types

GIANT SINGLE
SINGLE FRILLED
SINGLE CRESTED } Colors: White, pink, salmon, yellow, orange,
rose, scarlet, crimson.

NARCISSIFLORA. A recent development, flowers somewhat resembling the trumpet daffodil. Colors: Yellow, orange, salmon, scarlet.

Prices for Tubers: 20c each, \$2.00 per doz., \$12.00 per 100.

Double Types

CAMELIA TYPES. Flowers resembling camelias and roses in all variation of form and color. Colors: White, blush, pink, rose, crimson rose, American Beauty, yellow, apricot, orange, burnt orange, salmon, scarlet, dark red. NEW: Cardinal red, light salmon and dark salmon.

FIMBRIATA PLENA. Often called the carnation type or double frilled. Colors: White, pink, rose, crimson rose, red salmon, yellow, apricot, orange, salmon, scarlet and crimson.

ROSEBUD TYPE. As its name indicates, it resembles roses while in bud. Colors: Mixed shades ranging from pink, rose through all salmon shades to almost red.

Continued on next page



Single Tuberous Rooted Begonia

Double Types-Continued

MARMORATA TYPE. Red and white variegated. NEW: Large flowers of camelia form in pink and salmon shades with striking red edges.

LLOYDII TYPE. For hanging baskets. Colors: White, pink, rose, crimson rose, scarlet, yellow, salmon, apricot and orange. NEW: Large flowering types in white, orange, salmon, and dark red.

Prices for Tubers: 25c each, \$2.50 per doz., \$15.00 per 100.

Tuberous Rooted Begonia Seed

SINGLE TYPES. All separate colors as indicated for tubers or any desired mixture. 50c per packet, 25c per half packet.

Collection of 8 colors: \$3.50 packets, \$1.75 half packets.

DOUBLE TYPES. All separate colors as indicated for tubers or any desired mixture. \$1.00 per packet, 50c per half packet.

Collection of 8 colors: \$7.00 packets, \$3.50 half packets.

Seedling Plants

From May to end of June we can supply young seedling plants ready to be planted out in all colors and types as indicated for tubers.

Prices: \$1.50 per doz., \$10.00 per 100.

Tuberous Rooted Begonia Culture

SEED. Sow from January to March. Place one or two inches of gravel in flats or seed pans, to insure good drainage, over which place a fairly coarse mixture of two-thirds leaf mold and one-third peat about one inch deep. Smooth the surface with same mixture, finely sifted, not more than one-eighth inch deep but do not press it down. It is necessary for the surface to be of a spongy character so that when the seed germinates the young roots can get into it. If surface is too fine and packed the seedll. often fall over as the young roots are unable to get in.

Place the pans in shallow water until thoroughly soaked up from below, then broadcast the seed. Cover with glass and a sheet of paper or keep it in the dark until germination takes place. Night temperature of 65 to 75 degrees Fahr. is necessary for quick germination. Lower temperature than 65 degrees will considerably slow up germination with poorer results.

As soon as germination takes place, take the paper off and in three or four days lift the glass also, otherwise the little seedling will get too spindly. Warm temperature, protection from direct sunlight and uniform moisture are absolutely necessary. Even a slight drying out of the surface will be fatal to the delicate young plants. Very gentle overhead watering should be used when necessary.

When the third leaves are developed, transplant one inch apart in flats containing the same mixture as for sowing. No finely sifted surface is necessary any more. Do not put more than one to one and one-half inches deep of soil in your flats. Deep flats filled with several inches of soil are not necessary. Usually they do not drain well, soil will get sour and checking growth will be the result. Before they get too crowded transplant in same manner again farther apart until strong enough to be planted out in open or if desired potted up.

If planting in open ground, enrich the soil liberally with well rotted cow or sheep manure and sprinkling of bone meal. If soil is heavy add plenty of either leafmold, peat or sand or mixture of all so that the ground will be light and porous. Plant in shaded position such as under the trees or north side of the house where direct sunlight cannot reach them. Keep well watered, fine overhead sprinkling preferred.

In autumn when the foliage turns yellow, withdraw the water gradually and when all growth dies down entirely, take out, wash off all soil, taking care not to bruise the tubers, dry in sunlight for day or two until thoroughly dry, then store in open flats in cool dry place. See that all particles of the old stem are removed until healthy tissue shows, otherwise if left on they will decay and destroy the tuber.



TUBERS. If early flowering is desired, place tubers during January and February in warm place in open flats, moisten slightly once in a while and gradually the ones that begin sprouting buds, plant in flats filled with peat only about three inches apart according to size of the tuber, so that they are only slightly covered. Keep uniformly moist but not too wet in a warm place well lighted until three or four inches of growth develops, then plant in pots or permanent position in open if desired. This method is preferable to planting the tubers directly in open ground as far more uniform planting can be had and each plant placed exactly as desired. The front is always where the tips of the leaves are pointing. Often if dormant tubers are planted in open ground, especially if it is cold and too wet, numbers of them may rot and the planting will be uneven, some coming earlier, some later, and facing haphazard way. Started first in peat they will develop splendid root system which is necessary for developing good specimens.

For pot culture any rich light soil is suitable. Mixture of two parts of coarse leafmold, one part of sand will bring good results. It is important for the mixture to be of light coarse character so that it will drain well. Finely sifted soil will pack down without permitting the circulation of air, hence only moderate good results can be expected. Too much manure will make the soil soggy, often with fatal results. If very strong growth is desired bone meal should be mixed well with the soil, approximately teaspoonful to six inch pot of soil.

Perfect drainage is most important, and to provide it place at least one inch deep of gravel on the bottom of the pot.

When potting up use smaller pots in beginning and move later into larger before they are pot bound. If tubers are well started in peat with considerable root system, they may be planted immediately in large pots approximately from six to eight inches for one year old tubers. Older, larger tubers will of course require larger pots. Very great care with watering is necessary when they are planted immediately in large pots. Keep the surface only moist in the young stage until the growth is well developed and then heavier watering is justified. If you overwater the soil in the beginning, it will become sour, the plants will make only sickly growth, buds will fall off before blooming, and the plants may die out entirely. This is true especially of Hanging Basket Types.

If very strong growth is desired additional feeding will be necessary when buds begin to develop, watering once a week with liquid manure. A number of quick acting commercial fertilizers can also be used. Sulphate of ammonia or fish meal, both in combination with sulphate of potash in proportion of 10 to 1, will bring good results. Half teaspoon once or twice during the season, sprinkled around the edge of the pot (not close to the stem) will be sufficient. Heavier doses will do more harm than good, often causing distortion in the flowers or burning up the roots, destroying the plant entirely. Lath house with strong muslin roof is a very suitable place for development of show specimens in warm regions where greenhouses would be too warm. If grown in greenhouse, thorough ventilation day and night must be available. Openings in walls under the benches will give good circulation of air. On hot days heavy shading and sprinkling the walks with water will keep the temperature down. 65 to 80 degrees Fahr. is the most ideal temperature, for as the cooler and slower they develop, the finer and larger the flowers will be. Higher temperatures produce quick weak growth and the flowers do not develop as good size and as lasting quality.

Do not prune begonias. Any open wound will be immediately attacked by fungus, especially when crowded without good circulation of air. If you cut the flowers cut only half of the stem. The other half mature and fall off itself without leaving a wound.

If well balanced hanging baskets are desired, pick all buds off until the growth is enough advanced and the branching develops. Some hanging types are quite strong growers and if only one to three stems are on the tuber, they should be pinched off when first bud appears to induce the side shoots to develop.



PESTS. Occasionally begonias are attacked by aphis and thrip in the greenhouse if kept in dry close temperature. Fumigating with nicotine on two or three alternate evenings will control these pests easily.

Very rarely they are also subject to mite attacks. These are very small and cannot be seen without a lens. The first sign of their presence are brown rusty streaks on the young shoots and foliage, deforming and destroying the season's growth entirely if not checked.

Infected plants should be isolated immediately. Thorough spraying with Volk will check this pest.



Tuberous Begonia Fimbriata plena or Carnation Type



Vase of Gloxinias, Tigrina Type

Gloxinias

We grow over a quarter of a million Gloxinias annually and only by selecting from such large quantity was it possible for us to make the rapid improvement in form and size of the already existing standard varieties, as well as creating new ones. The varieties offered are the best selected after extensive trials from sources all over the world. All are large flowered with good form, clear colors, and upright habit.

Solid Colors

MOUNT BLANC. Clear glistening white.

BLANCHE DE MERU. Pinkish rose, white throat.

QUEEN WILHELMINA. Crimson rose.

ETOILE DE FEU. Light scarlet, compact growth.

ROI DES ROUGES. Brilliant crimson scarlet, huge flower, beautifully frilled.

PRINCESS ELIZABETH. Light blue, white throat.

VIOLECIA. Soft violet.

PRINCE ALBERT. Darkest violet, beautifully frilled.

EMPEROR WILLIAM. Violet bordered white.

EMPEROR FREDERICK. Scarlet bordered white.



Tigrinas

The group of tigrinas is in a class by itself. For size and beautiful form of flowers, they are superior to all others. Almost any shade of color existing in Gloxinias is found here. The markings appear in endless variation, producing beautiful combinations, orchid-like in appearance, again often they are like the finest lace, especially in the delicate pink tones.

We have segregated the colors and are offering the following separate shades:

Pink, Scarlet, Crimson Rose, Blue, Lavender, Violet.

PRICES: 35c each, \$3.50 per dozen, \$25.00 per hundred.

Gloxinia Seed

The seed we are offering is from the choicest specimens selected each year and artificially cross pollinated to insure the highest standard of quality.

PRICES: In separate colors or any desirable mixture, 50c per packet, \$5.00 per 1/64 ounce.

Culture

Gloxinias can easily be grown from seed. Sown from January to August, according to when the flowering is desired. If well handled they will produce good specimens from five to six months. The culture is exactly the same as growing begonias from seed. For good results they should be grown under glass all year around with slightly higher temperature than begonias. The soil should be very light. Three-fourths coarse leafmold and one-fourth peat will produce very quick growth. Bone meal mixed with soil before planting and additional feeding with liquid manure as for begonias when buds begin to develop will give good results.



Tubers

For developing large show specimens, tuber should be used, as the seedlings will form only few flowers the first year. They can be started in same way as described for begonias.

Warm and moist temperature should be maintained in the greenhouse during the younger stage of the growth, somewhat cooler and well ventilated when in bloom. If kept in dry temperature they are subject to aphis and thrip which will destroy the young buds entirely. Occasional fumigating with nicotine before the pests are too noticeable will prevent them from doing too much damage.

After the blooming period when the foliage turns yellow, they should be dried up gradually and handled the same as begonias. Storing room for tubers should be frostless.



Pacific Strain Delphinium Hybrids

Our new crop of seedlings this year proved of such a high standard of quality that we feel justified in introducing our strain under distinct name as although originally derived from sources all over the world now has definite characters of its own.

Huge flowers two and one-half to three and one-half inches in diameter, beautifully spaced on well balanced long spikes, thin woody stems, clear colors as well as pastel shades with comparative mildew resistance is our standard of quality.

A very conservative buyer for large Eastern firm who saw our fields in bloom, exclaimed that he never had seen anything better even in England. We have repeatedly shown in the Spring and Autumn shows in Oakland, the State Fair in Sacramento, and various small shows in the Bay Region, always winning First Prize in every class, with comparative ease.

This year for the first time we are offering series of crosses for those who desire only the best. The choicest new seedlings are artificially cross pollinated for that purpose. So far we have used the seed only for our planting as the production of it is quite expensive, but now are offering limited quantity to give our customers an equal chance. The percentage of perfect show specimens from this seed is the highest obtainable.

Owing to favorable climatic conditions, we can offer fresh seed at any time, as our flowering season begins in February and seeds are gathered from April to December.

Specialties in Cross Pollenized Seed

Pink Lavender	Darkest Violet
Light Blue	Clear White
Rich Violet	Pastel Lavender
Lilac	Pastel Blues
Lavender	Pastel Violet
Dark Blue	White with Black Bee

PRICES

Individual Colors or any

Desirable Mixture, per pkt.	\$ 2.00
Collection of Five Colors, 5 pkts.....	8.00
Collection of Ten Colors, 10 pkts.....	15.00

Choicest Self Pollenized Seeds

Lavenders, Blues, Violets, Pastel Shades, Clear White.

PRICES

Per Packet \$1.00, per Half Packet 50c.

Delphinium Plants

From March to the end of June, and from September to the end of November we are offering strong young plants in twelve assorted shades as marked for cross pollenized seed. Transplanted, they will grow rapidly on and bring far better results in shorter time than the old clumps.

We prefer distribution of young seedlings rather than the one or two year old clumps, which very seldom bring good results as they are quite exhausted and it takes a year at best to get them reestablished during which time the flowers are not at their best. Young seedlings will produce show specimens within four or five months after planting and continue blooming for several years.

In California interior valleys where the climate is too warm, Autumn planting, September and October, is preferable. Plants having time to establish good root system during winter will bring beautiful spikes in early Spring. Cooler regions will give good results from both Autumn and Spring planting except in heavy cold soils where Spring planting is preferable.

All seedlings offered are grown from the choicest cross pollenized seed.

PRICES

\$2.00 per Dozen, \$15.00 per Hundred.

Delphinium Cardinale

The Giant Scarlet Larkspur is native of Southern California and differs in requirements from the garden hybrids. Growing season in California begins with the early rains in October and ceases after flowering in July or August. Only one crop of bloom per season from February to June, after which the plants should be kept thoroughly dry until October when slight watering will bring them into new growth. They form single tuberous roots and can be transplanted only during dormant season.

PRICES

Strong roots from September to November only.

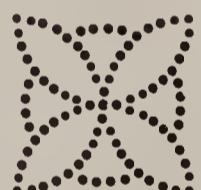
\$2.00 per Dozen, \$15.00 per Hundred.

Seed: 25c per Packet. (See planting directions on page 15.)



Part of Our Field of Delphinium Seedlings

Seed sown in December, planted out in April; photo July.



JOIN *American Delphinium Society*

Instructive bulletins issued quarterly. Membership
\$2.00 per year. Send application to Frank Burns,
San Rafael, Calif.

Culture of Delphinium Hybrids

SEED. For early spring flowers sow from June to September, for mid-summer bloom December to January, and for fall bloom, February, March and April.

Sow in flats or pans in a mixture of two-thirds coarse leafmold, one-third peat and slight addition of sand. Smooth the surface, broadcast seed and press it down very gently with piece of board, then cover very thin with finely sifted peat, well moistened before using. Water thoroughly, cover with pane of glass and sheet of paper. Place in temperature of 60 to 70 degrees Fahrenheit. At lower temperature the germination will be very slow. Higher temperature will bring poor germination, especially in summer. At 90 to 100 degrees Fahrenheit the germination will be very poor. After approximately six to eight days, or as soon as germination takes place, paper should be taken off and two or three days later also the glass. Shade, good air circulation and uniform moisture must be maintained in the early stage of growth. Drying out when the germination is taking place will be fatal.

Dampening off will occur only if flats are kept too wet in greenhouse without proper ventilation. Watering with weak solution of chlorox, about four to six per cent, we found as best cure and preventive.

When second leaves are developed and before the plants are too crowded, prick in flats three inches apart in a mixture of two-thirds sandy loam and one-third peat. Keep shaded for two or three weeks, then gradually give more light and when larger harden off in full sunlight before planting out in permanent position, about two to three feet apart.

Open sunny location is necessary for best development. In shade they will grow too spindly with only small flower spikes. Close to the walls, they will mildew more than in the open.

Ground should be well prepared for planting. Liberal application of well rotted cow or sheep manure with sprinkling of bone meal mixed with the soil which should be dug a foot deep, will produce fine growth. Heavy wet soils will require slight additional lime. Good drainage and uniform supply of moisture during the growth is essential.

When first crop of bloom has faded, cut the flower spikes off above the foliage and keep slightly dry until new shoots appear above the ground, then cut rest of the old stock, sprinkle spoonful of sulphate of ammonia combined with sulphate of potash in proportion of ten to one around each plant, rake it slightly in the ground and water thoroughly. From the new shoots appearing out of the ground, select two or three of the strongest and break the rest of them out. You shall have good crop again. Do not force new growth late in Autumn. Rather keep the plants on dry side. If forced into bringing third crop late in the season the plants will soon exhaust themselves and gradually die out.

Mildew will attack plants grown close to a wall, or planted thick together, especially later in the fall. The new "Ortho Mildew Spray" originated by the California Spray Chemical Corp., diluted with water to 4 per cent strength, will control it perfectly. This spray not only acts as a preventive but will cure heavily affected plants, as it kills mildew instantly. It is a light oil, can be applied at any time without burning the foliage to which it gives a nice shiny appearance.



Delphinium Cardinale

Sowing directions for the scarlet larkspur differ slightly from that for the garden hybrids. They cannot be transplanted with bare roots when growing. Sow either in small pots and plant out later without disturbing the root system or sow in flats in peat with slight addition of sand only. Peat is the only medium that will stick to the roots so that they may be safely transplanted in the field.

Gerbera (Transvaal Daisy)

The new Gerbera Hybrids are rapidly gaining popularity in California gardens and truly there are very few flowers that can compete with them in color range, decorative value and keeping quality as a cut flower.

While much improvement has been done by breeders in size and color range, less attention was paid to the quality and form. A few years ago there appeared in our planting a small flower with very wide thick petals, the form almost that of a Shasta Daisy. It remained open absolutely flat and did not wilt in hot weather, which is the common fault of the thin ray-like type. When cut, after two weeks in water, it still kept the form where under same conditions other types had to be discarded in six days.

Interbreeding this small seedling with the large ray type through many generations, we have been able to produce an improved strain with large flat flowers of strong quality, which will undoubtedly be of great value to the florists, besides adding to the popularity of Gerberas for garden decoration.

During the growing season plants are shipped with flowers on so you may see what you are buying.

COLOR RANGE COVERS EVERY SHADE FROM WHITE THROUGH PINK, ROSE, SALMON, YELLOW, APRICOT, ORANGE, SCARLET, CRIMSON ROSE, CRIMSON, TO DARKEST RED.

PRICES

Selected Two Year Old Plants, per Dozen	\$4.00
Selected One Year Old Plants, per Dozen	3.00
Young Seedlings in Mixture	per Dozen \$1.00, per 100 7.00
SEED: Per Packet (Over 150 Seeds)	1.00
Per 1/16 Ounce (Over 350 Seeds)	2.00

Gerbera Culture

Upon receiving the plants cut all foliage off entirely and plant in open ground in any location except heavy shade so that the crown is on the level with the soil. If it is buried deeper, it results often in crown rot and the plants may die out entirely. Perfect drainage is most important. They are best if grown in raised beds by themselves.

Sandy loam is the best soil for them; however, they will grow almost in any type of soil provided it drains well.

Slight addition of cow or sheep manure with sprinkling of bone meal, well mixed before planting soil will help. Excessive use of fresh manure should be avoided.

Once established they are best if left alone for years. If moving and dividing is desired, it should be done in early spring, February or March.

Old established clumps can be kept in vigor by small adding of bone meal to the ground in early spring. Sprinkle handful around each plant and rake in the ground. Then water thoroughly.

SEED. When growing plants from seed sow either in flats or open ground in light sandy soil. Cover only slightly. Keep moist and heavily shaded until germination starts (about ten days). Then give a little more light but never full sunlight. Transplant about three inches apart, when the second leaves are developed. When fairly good size, gradually harden off and plant out.

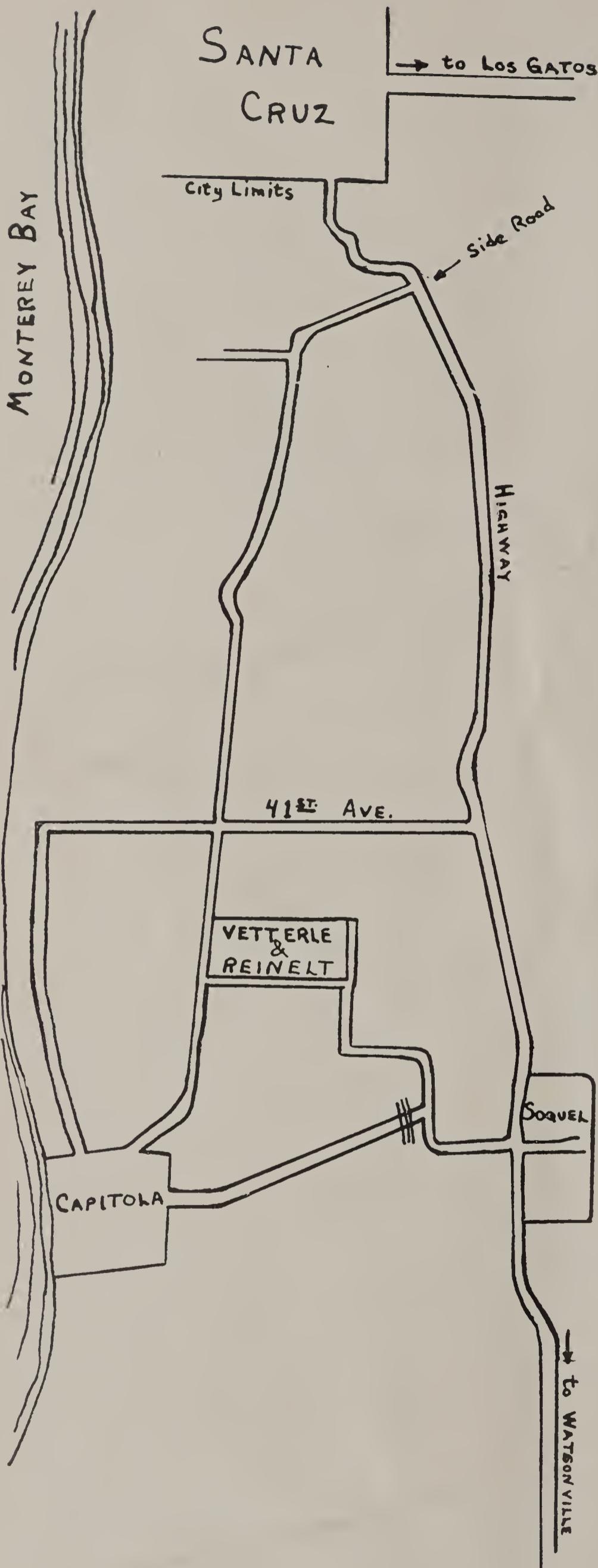
We offer only guaranteed fresh seed from our breeding stock. The hybrid gerberas do not come true to color from seed. There is always considerable variation and hardly two of them will be alike. Hence the seed can be supplied only in mixture.

PESTS. Gerberas are subject to crown rot. This is a fungus disease for which there is no cure known and the infection ruins the plant often within a few days.

Deeply buried crowns and heavy watering without adequate drainage causes most of this trouble.



New Variations in Types of Gerberas



VISITORS

Are cordially invited to inspect our plantings during the season.

In April and May the first crop of Delphinium Seedling is at its height.

Breeding stock of Tuberous Begonias and Gloxinias in our greenhouses is at its best in June and July.

In August and September over a million seedling of Tuberous Begonias can be seen in full bloom in our lath houses.

New crops of Delphinium seedlings are brought into flower during August and September.

Gerberas are at their best during Spring and Autumn months.

We are situated 4 miles out of Santa Cruz, as can be seen on the map.

When coming from Santa Cruz, take first side road to the right when past city limits and follow it to our nursery.

If coming from Watsonville, turn left in Soquel as indicated on the map.

